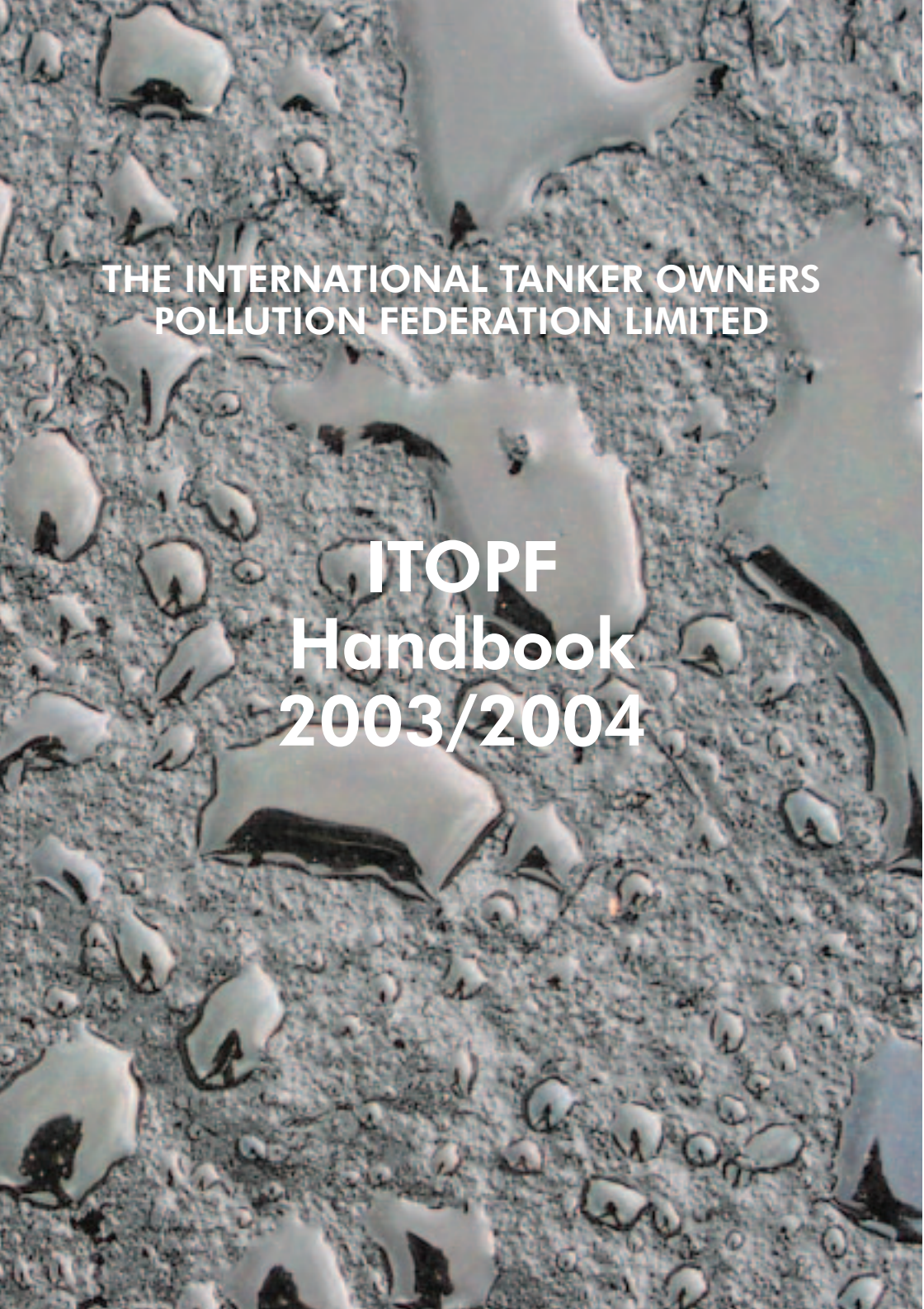

THE INTERNATIONAL TANKER OWNERS POLLUTION FEDERATION LIMITED

ITOPF Handbook 2003/2004

Contents

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Introduction

Over the past thirty years ITOPF's technical staff have responded to more than 450 ship-source spills in 85 countries in order to give objective advice on clean-up measures, environmental and economic effects, and compensation. Whilst most of these spills involved crude oil spilled from tankers, ITOPF staff are regularly called upon to respond to spills of bunker fuel, chemicals and bulk cargoes from all types of ship. Advice is also occasionally given in relation to oil spills from pipelines and offshore installations, and physical damage to coral reefs resulting from ship groundings.

The first-hand experience gained by ITOPF staff through direct involvement in pollution incidents is put to good use during contingency planning and training assignments, as well as in the production of technical publications.

ITOPF is a non-profit making organisation. Over 90 per cent of its income comes from subscriptions paid by P&I insurers on behalf of their shipowner members, who they enrol in ITOPF as either Members or Associates. This gives them access to the organisation's full range of technical and information services, usually at no cost.

ITOPF's Membership comprises over 4,300 tanker owners and bareboat charterers, who between them own or operate about 8,400 tankers, barges and combination carriers with a total gross tonnage of about 196 million GT. This represents virtually all the world's bulk oil, chemical and gas carrier tonnage and so it is extremely rare for the owner of any such ship engaged in international trade not to be a Member of ITOPF.

Associates comprise the owners and bareboat charterers of all other types of ship, currently totalling some 320 million GT. This reflects ITOPF's increasingly important role in recent years in responding to bunker spills from non-tankers.

ITOPF's activities are overseen by an international Board of Directors representing the organisation's independent and oil company tanker owner Members, its Associates and P&I insurers. The names of the current Directors appear opposite.

Since its establishment in 1968, ITOPF has evolved into the maritime industry's primary source of objective technical advice, expertise and information on effective response to ship-source pollution. ITOPF has observer status at both the International Maritime Organization (IMO) and the International Oil Pollution Compensation Fund (IOPC Fund) and regularly contributes to discussions on matters relating to ship-source pollution.

In the Event of a Spill of Oil or Hazardous and Noxious Substance (chemical)

Emergency Contact – Business Hours

Please use ITOPF's office telephone number:

+44 (0)20 7621 1255

Emergency Contact – Outside Normal Office Hours

+44 (0)76 2691 4112

This number is linked to a voicemail and radio paging system. Callers should therefore be ready to record a brief message. The member of the ITOPF technical staff who is on duty will return the call and will require as much of the following information as possible:

Essential Information

- Contact details of the person reporting the incident
- Name of vessel and owner
- Date and time of the incident (specifying local time or GMT/UTC)
- Position (eg latitude and longitude or distance and direction from the nearest port or landmark)
- Cause of the incident (eg collision, grounding, explosion, fire, etc) and nature of damage
- Description and quantity of cargo and bunker fuel on board
- Estimate of the quantity spilled or likelihood of spillage
- Name of the cargo owner
- Action, both taken and intended (and by whom), to combat pollution
- Status of the vessel and any planned salvage activities

Additional Useful Information

- Weather and sea conditions, wind speed and direction
- Length, breadth and appearance of any slicks or plumes, including direction of movement
- Type of resources that may be at risk (eg fisheries or residential areas)
- Distribution of cargo and bunkers and location relative to damage

Oil

- Density, viscosity, pour point, distillation characteristics, wax & asphaltene content

HNS Chemicals

- State – solid, liquid, gas, bulk or packaged
- UN or CAS number, MSDS, bill of lading

Technical Services

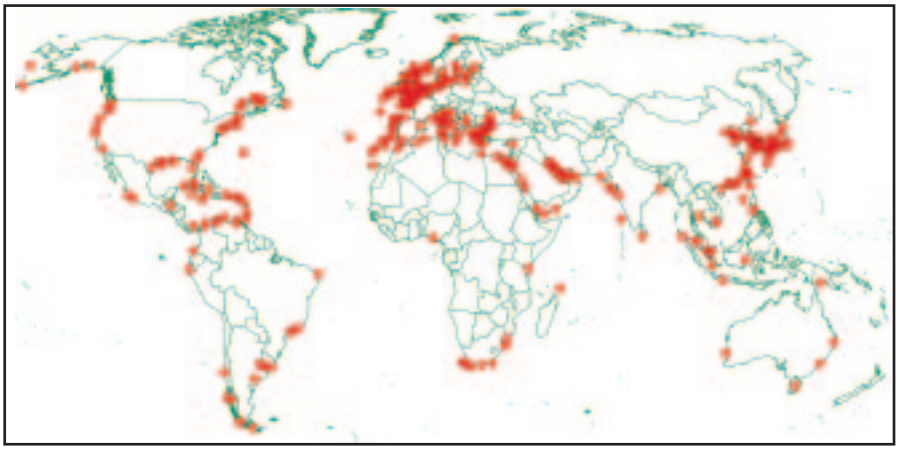
Response to Marine Spills

Responding to ship-source spills of oil or chemicals is ITOPF's priority service and is normally performed, without charge, at the request of one of its Members or Associates and their P&I insurers. The IOPC Fund also usually calls on ITOPF's technical services for oil spills with which it is involved.

ITOPF's first task on being advised of a new spill is to evaluate the probable behaviour, fate and impact of the oil or chemical, and the local capability to organise an effective clean-up response.

At the same time as the details listed on page 4 are being sought from outside sources, ITOPF staff will be referring to internal information on environmental and economic resources likely to be at risk in the affected country, as well as on the national arrangements for spill response. This and other relevant information is summarised in the appropriate Country Profile, the complete series of which can be found on ITOPF's website. This is also the source of other relevant information, for example, on the applicable liability and compensation regime.

Internal databases on the availability of clean-up equipment and materials, local surveyors and other experts will also be consulted and guidance sought from ITOPF's experience of previous spills in the same region. If the evaluation of the spill indicates that it is likely to pose a serious threat to coastal resources, a member of the ITOPF technical staff will probably be asked to attend on-site immediately.



Spills attended by ITOPF staff, 1970-2002

The role of the ITOPF technical staff member at the site of a spill varies according to the circumstances but is always advisory. It normally includes one or more of the following activities:

- advising and assisting all parties on the most appropriate clean-up response, with the aim of mitigating any damage;
- helping secure equipment and organise the clean-up when there is a need to supplement the local response capability;
- monitoring the clean-up, in order to provide subsequent reports of events and of the technical merit of actions in relation to claims for compensation;
- investigating any damage to the environment and to coastal resources such as fisheries and mariculture.

In all cases the aim is to co-operate and work closely with all parties involved in a spill, and to reach agreement on measures that are technically justified in the particular circumstances. This not only helps ensure that the clean-up is as effective as possible and that the minimum of damage is caused, but also that subsequent claims for compensation can be dealt with promptly and amicably.

Damage Assessment and Claims Analysis

Assessment of the technical merits of claims for compensation is a natural extension of ITOPF's on-site attendance at the time of a spill. It usually involves assessing the reasonableness of clean-up costs and the merits of claims for damage to economic resources. The assessment of damage to fisheries - especially mariculture facilities - is a particular area of specialisation which often requires the detailed analysis of complex claims, frequently in conjunction with other specialists who

have in-depth knowledge of the affected area and the economics of its particular fisheries.

ITOPF's advice is also regularly sought on environmental damage caused by spills, and on the feasibility and technical justification of proposed restoration measures designed to enhance natural recovery.

ITOPF's role in damage assessment and claims analysis is limited to providing advice on the technical merit of claims. The final decision on settling any claim rests with those who will pay the actual compensation, usually a P&I insurer and/or the IOPC Fund.

Contingency Planning and Advisory Work

A major spill of oil or chemicals presents those in charge with a range of complex problems and prompt decisions are needed if an effective response is to be mounted. There is a greater likelihood that this will happen if effort has been devoted beforehand to the preparation of a contingency plan that is both comprehensive and realistic.

Using their extensive practical experience of spill response around the world, ITOPF staff often advise governments, industry, international agencies and other organisations on the preparation of contingency plans and related matters.

Training and Education

Regular training is vital if personnel are to implement a contingency plan effectively and mount an efficient response to an incident. ITOPF organises and participates in numerous training courses and seminars for government and industry personnel around the world, and frequently assists with spill drills and exercises conducted by shipowners and other groups.

Information Services

Library

To support its technical services, ITOPF maintains an extensive library of publications and information on clean-up techniques, effects and other related issues. Visitors are welcome by appointment.

Publications

ITOPF produces a wide range of technical publications and papers. These are designed to keep Members, Associates and others around the world in touch with developments in spill preparedness, response and compensation. A list of ITOPF publications can be found on pages 38 and 39.

Databases

Since 1974, ITOPF has maintained a worldwide database of accidental oil spills from tankers, combined carriers and barges. This is probably the most comprehensive of its kind and allows long term trends to be analysed (see opposite for details).

To assist ITOPF's technical staff to respond to spills, information is maintained on the availability and cost of clean-up equipment and materials stockpiled around the world. This information is summarised in the Country Profiles.

Country Profiles

ITOPF's series of Country Profiles, summarising the oil spill response arrangements and clean-up resources in some 160 maritime countries, is freely available on the ITOPF website. Each Profile is two to three pages long and contains information on the spill notification point, command structures for at-sea and on-shore response, the availability of government- and privately-owned equipment, past spills and the status of relevant international Conventions.

www.itopf.com

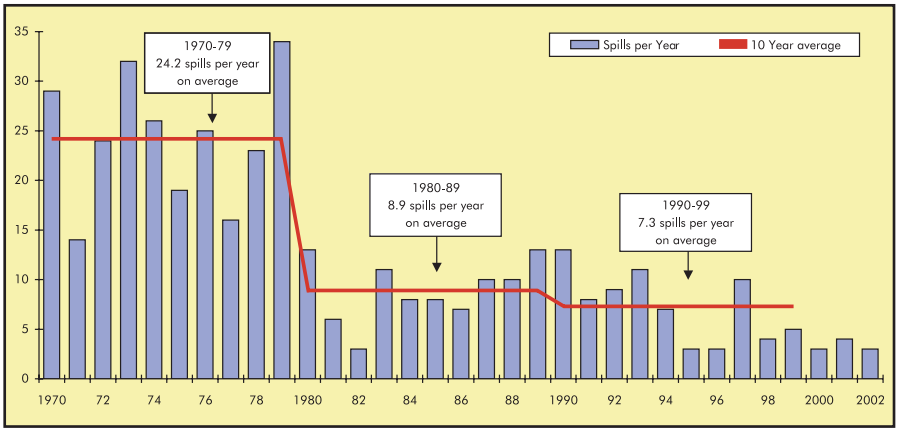
The website provides background information on ITOPF and news of its current activities; technical advice on spill response; statistics on numbers, sizes and causes of spills, plus information on the fate and effects of oil, contingency planning and liability and compensation. There are also links to other useful websites.

Oil Spill Statistics

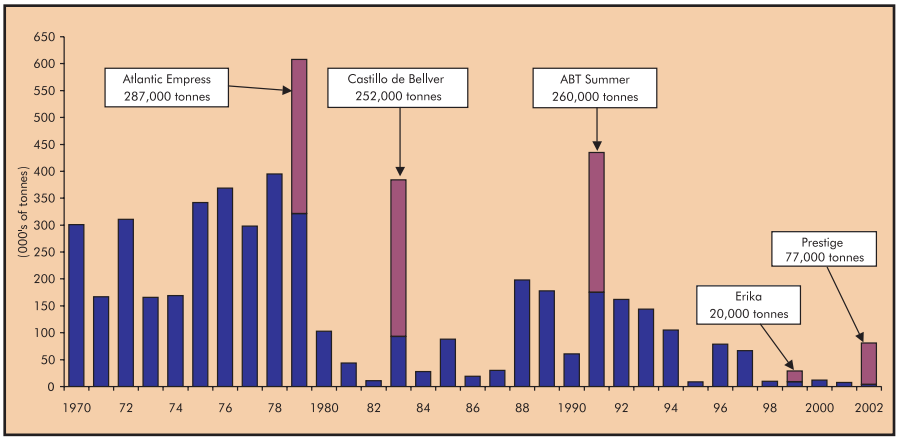
The ITOPF database contains information on approximately 10,000 oil spills from tankers, combined carriers and barges, some 85% of which were less than seven tonnes. More detailed information is available on the ITOPF website.

Number and Amounts

The average number of large oil spills (>700 tonnes) during the 1990s was less than a third of that during the 1970s. This dramatic reduction has been due to the combined efforts of the tanker industry and governments (largely through the IMO) to



Numbers of large spills (over 700 tonnes), 1970-2002

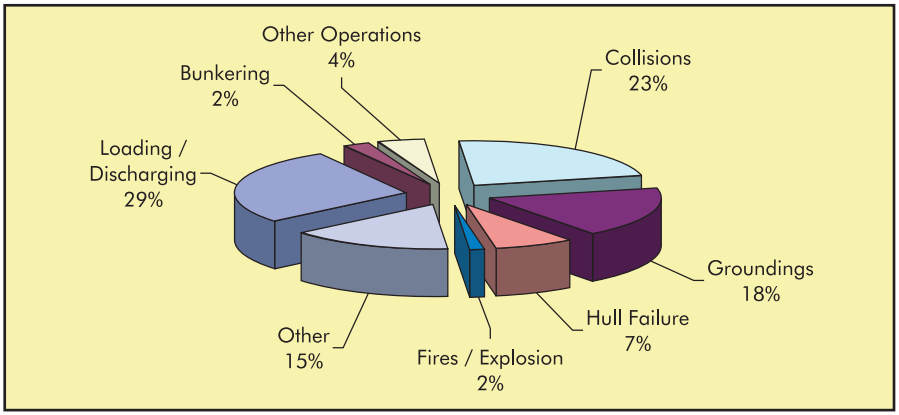


Quantities of oil spilled, 1970-2002

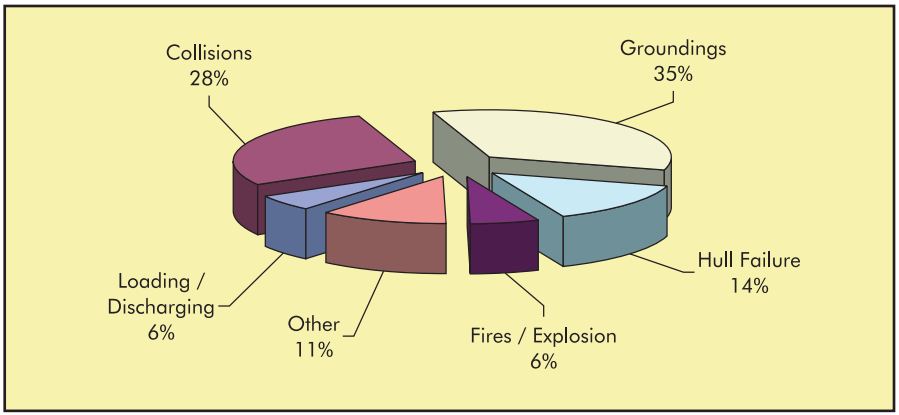
improve safety and pollution prevention. The total amount of oil spilled each year varies considerably, with a few very large spills being responsible for a high percentage of the total annual quantity.

Causes of Spills

Most incidents are the result of a combination of actions and circumstances, all of which contribute in varying degrees to the final outcome. Some 35% of spills in the category 7-700 tonnes occurred during routine operations, most especially loading or discharging (29%). Typically these operational spills were small. Accidents are the overwhelming cause of large spills (>700 tonnes), with groundings and collisions accounting for 63% of the total during the period 1974-2002. Other significant causes included hull failures and fire/explosion.



Causes of intermediate spills (7-700 tonnes), 1974 - 2002



Causes of large spills (>700 tonnes), 1974 - 2002

Fate of Marine Oil Spills

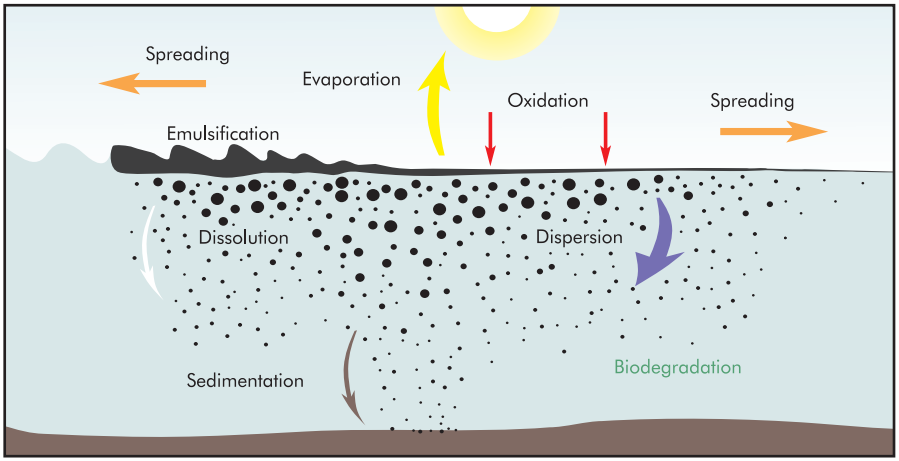
When oil is spilled at sea it spreads and moves on the surface while undergoing a number of chemical and physical changes, collectively termed weathering. The diagram below schematically represents the different processes involved.

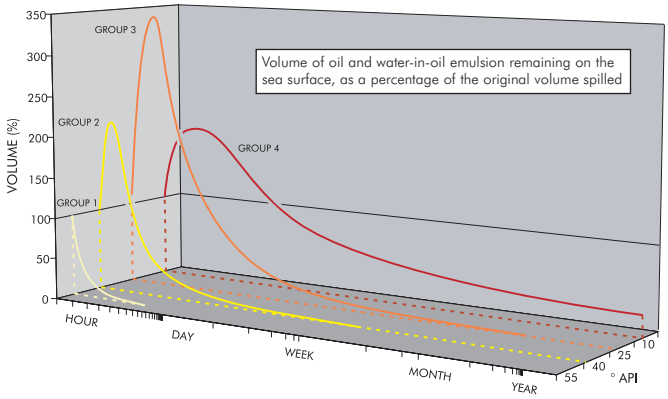
Weathering Processes

Most of the processes, such as evaporation, dispersion, dissolution and sedimentation, lead to the disappearance of oil from the surface of the sea, whereas others, particularly the formation of water-in-oil emulsions ("mousse") and the accompanying increase in viscosity, promote its persistence. The speed and relative importance of the processes depend on factors such as the quantity and type of oil, the prevailing weather and sea conditions, and whether the oil remains at sea or is washed ashore. Ultimately, the marine environment assimilates spilled oil through the long-term process of biodegradation.

Persistence of Oil

In considering the fate of spilled oil at sea, a distinction is frequently made between non-persistent oils, which tend to disappear rapidly from the sea surface, and persistent oils, which in contrast dissipate more slowly and usually require a clean-up response. The definition of a non-persistent oil developed in relation to compensation is given on page 26. However, this definition is based on distillation characteristics of oils under standard laboratory conditions. It may not, therefore, fully reflect the behaviour of an oil in the environment, where factors such as burial in sediments can lead to





the long-term persistence of oils that would normally be defined as non-persistent.

Models

The main properties which affect the behaviour of spilled oil at sea are specific gravity (its density relative to pure water - often expressed as °API); distillation characteristics (its volatility); viscosity (its resistance to flow); and pour point (the temperature below which it will not flow).

Since the interactions between the various weathering processes are not well understood, reliance is often placed on empirical models based upon the properties of different oil types. For this purpose, it is convenient to classify the most commonly transported oils into four main groups, roughly according to their specific gravity (see table opposite). Having classified the oils, the expected rates of dissipation can be predicted. These are shown in the above graph, where account is also taken of the competing process of emulsification which, for most oils, leads to an increase in volume.

Group I oils (non-persistent) tend to dissipate completely through evaporation within a few hours and do not normally form emulsions. Group II and III oils can lose up to 40% by volume through evaporation but, because of their tendency to form viscous emulsions, there is an initial volume increase as well as a curtailment of natural dispersion, particularly in the case of Group III oils. Group IV oils are very persistent due to their lack of volatile material and high viscosity, which precludes both evaporation and dispersion.

It is important to appreciate the assumptions upon which such models are based and not to place too much reliance on the results. However, they can serve as a useful guide to understanding how a particular oil is likely to behave and help in assessing the scale of the problem which a spill might generate.

CLASSIFICATION OF OILS ACCORDING TO THEIR SPECIFIC GRAVITY

Group 1

Specific Gravity < 0.8 (°API > 45)

B Viscosity cSt @ 15°C: 0.5 - 2.0
C % boiling below 200°C: 50 - 100%
D % boiling above 370°C: 0%

	B	C	D
Gasolene	0.5	100	0
Naptha	0.5	100	0
Kerosene	2.0	50	0

Group 2

Specific Gravity 0.8 – 0.85 (°API 35 - 45)

A Pour Point °C
B Viscosity cSt @ 15°C: 4 - Solid, Average 8
C % boiling below 200 °C: 19 - 48% Average 33%
D % boiling above 370 °C: 12 - 50% Average 31%

High pour point >5° C

	A	B	C	D
Amna	18	S	25	30
Argyll	9	11	29	39
Arjuna	27	S	37	15
Auk	9	9	33	35
Bach Ho	35	S	21	47
Bass Straight	15	S	40	20
Beatrice	12	32	25	35
Bintulu Neat	17	S	24	34
Bunyu	18	S	29	12
Cormorant	12	13	32	38
Dunlin	6	11	29	36
Es Sider	6	11	28	42
Escravos	10	9	35	15
Gippsland Mix	15	S	40	20
Lalang	33	S	19	49
Lucina	16	S	26	41
Nigerian Light	9	S	35	27
Qua Iboe	15	7	29	32
Rio Zulia	27	S	34	30
San Joachim	24	S	43	20
Santa Rosa	10	4	34	27
Sarir	24	S	24	39
Seria	18	S	37	15
Soyo	17	S	20	50
Thistle	9	9	35	38
Zuetina	9	9	35	30

Low pour point

	B	C	D
Abu Dhabi	7	36	31
Arabian Super Light	3	26	39
Berri	9	36	35
Beryl	9	35	34
Brass River	4	45	17
Brega	9	38	32
Brent Blend	6	30	38
Ekofisk	4	46	25
Kirkuk	1	35	36
Kole Marine	1	34	35
Lower Zakum		34	35
Marib Light		40	20
Montrose	7	36	31
Murban	7	32	34
Murchison	7	36	20
Olmeca		32	32
Oseberg	10	28	39
Palanca		30	35
Qatar Land	9	36	33
Sahara Blend	4	48	27
Sirtica	7	44	27
Gas Oil	5		

High pour point oils would only behave as Group 2 at ambient temperatures well above their pour points. At lower temperatures treat as Group 4 oils.

Group 3

Specific Gravity 0.85 – 0.95 (°API 17.5 - 35)

A Pour point °C
B Viscosity cSt @ 15°C: 8 - Solid Average 275
C % boiling below 200°C: 14 - 34% Average 22%
D % boiling above 370°C: 28 - 50% Average 46%

High Pour Point >5° C

	A	B	C	D
Bakr	7	1,500	14	60
Belayim	15	S	22	55
Bonny Light	12	25	30	30
Cabinda	17	S	18	56
Dai Hung	25	S	30	33
Djeno	6		16	61
Duri	18	S	5	75
Mandji	9	70	21	53
Morgan	7	30	25	47
Nile Blend	36	S	13	59
Soyo Blend	15	S	21	48
Suez Mix	10	30	24	49
Trinidad	14	S	23	28
Zaire	15	S	18	55

Low Pour Point

	B	C	D
Arabian Heavy	55	20	56
Arabian Light	14	24	45
Arabian Medium	25	22	51
Basrah Light		26	45
Bonny Medium		14	39
Buchan	14	31	39
Champion Export	18	15	28
Escravos		30	32
Flotta	11	34	26
Forcados	12	17	37
Forozan		24	49
Forties	8	32	36
Gullfaks	13	21	40
Hout	15	24	48
Iranian Heavy	25	24	48
Iranian Light		26	43
Khafji	80	21	55
Kuwait Export	30	23	52
Leona		14	56
Loreto		17	50
Maya	500	17	61
Miri Light		25	25
Nigerian Medium	40	14	40
Oman		23	45
Qatar Marine		29	39
Santa Maria	250	22	54
Siberian Light		24	52
Tia Juana Light	2,500	24	45
Upper Zakum		26	44
Medium Fuel Oil (IFO 180)	1,500-3,000		

High pour point oils would only behave as Group 3 at ambient temperatures well above their pour points. At lower temperatures treat as Group 4 oils.

Group 4

Specific Gravity > 0.95 (°API < 17.5) or Pour Point > 30°C
A Pour point °C
B Viscosity cSt @ 15°C: 1500 - Solid
C % boiling below 200°C: 3 - 24% Average 10%
D % boiling above 370°C: 33 - 92% Average 65%

	A	B	C	D
Bachequero	-20	5,000	10	60
Boscan	15	S	4	80
Bu Attifil	39	S	19	47
Cinta	43	S	10	54
Cyrus	-12	10,000	12	66
Daqing	36	S	12	66
Duri	14	S	5	74
Gamba	23	S	11	54
Handil	35	S	23	33
Heavy Lake Mix	-12	10,000	12	64
Jatibarang	43	S	14	65
Merey	-18	7,000	7	70
Minas	37	S	14	57
Panuco	2	S	3	76
Pilon	-4	S	2	92
Quiriquire	-29	1,500	3	88
Shengli	21	S	9	70
Taching	35	S	12	49
Tia Juana Pesado	-1	S	3	78
Wafra Eocene	-29	3,000	11	63
Widuri	46	S	7	70
Heavy Fuel Oil (IFO 380)		5,000-30,000		

Oil Spill Clean-up Techniques

Choosing the most appropriate techniques for cleaning up an oil spill is crucial and will depend upon the exact circumstances of an incident. The main techniques are described briefly below. More detailed information can be found in other ITOPF publications (see pages 38 and 39).

A clean-up response is not always necessary. Often the oil will remain offshore, where it will dissipate and eventually degrade naturally without affecting coastal resources or wildlife. In such cases, monitoring the movement and fate of the floating slicks to confirm the predictions may be sufficient. On this basis, some of the largest spills over the last 30 years have not required a clean-up response. In contrast, even a small spill, especially of a very persistent crude or heavy fuel oil, may call for a major response effort, especially if sensitive resources are threatened.

Response at Sea

Booms and Skimmers

The use of booms to contain and concentrate floating oil prior to its recovery by specialised skimmers is often seen as the ideal solution since, if effective, it would remove the oil from the marine environment.

Unfortunately, this approach suffers from a number of fundamental problems, not least of which is the fact that it is in direct opposition to the natural tendency of the oil to spread, fragment and disperse under the influence of wind, waves and currents. Thus, even if containment and collection systems are operating within a few hours of an initial release they will tend to encounter floating oil at an extremely low rate. Because of this it is rare, even in ideal conditions, for more than a relatively small proportion (10-15%) of the spilled oil to be recovered.

When containment and recovery is attempted it is important to select equipment that is suitable for the type of oil and the weather/sea conditions. Efforts should target the heaviest oil concentrations and areas where collection will reduce the likelihood of oil impacting sensitive resources and shorelines.

In-situ Burning

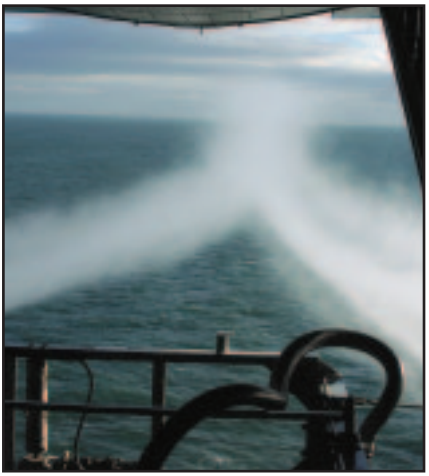
Because of the logistical difficulties of picking up oil from the sea surface and storing it prior to final disposal on land, an alternative approach involves concentrating the oil in special fireproof booms and setting it alight. In practice, this technique is unlikely to be viable in most ship-source spills, due to the difficulty of collecting and maintaining sufficient thickness of oil to burn. As the most flammable components of the spilled oil evaporate quickly, ignition can also be difficult. Residues from burning may sink, with potential long-term effects on sea bed ecology and fisheries. Close to the shore or the source of the spill, there may be health and safety concerns as a result of the risk of the fire spreading out of control or atmospheric fall-out from the smoke plume.

Dispersants

Dispersant chemicals work by enhancing the natural dispersion of the oil into the sea. The oil is broken down into tiny droplets which are dispersed into the water column, where they are diluted by currents and eventually break down naturally.

Dispersants can be sprayed from boats, planes and helicopters. With good operational support, large quantities of oil spread over a wide area can be treated quickly and effectively. For maximum effectiveness, dispersants need to be applied to oil before it has become viscous through evaporation or formed an emulsion. Some types of oil such as heavy fuel oil and viscous crude are less amenable to dispersion from the outset.

The controlled use of dispersants can reduce the overall impact of an oil spill on environmental and economic resources. However, since their use results in the oil being transferred from the sea surface into the water column, there needs to be a careful evaluation of the



relative risk to potentially sensitive resources in different parts of the marine environment. If there are conflicting priorities (eg between seabirds at risk from floating oil and commercial fish and shellfish at risk from dispersed oil) these need to be resolved at the contingency planning stage. Because of their potential to do harm if used incorrectly, the approval of dispersant products and their use is generally strictly controlled by the relevant government authorities.

Protecting Sensitive Resources

Given the difficulties of cleaning up oil at sea, spilled oil will often threaten coastal resources. It may be possible to protect some of these resources by the strategic deployment of booms. Other measures may also be appropriate, such as closing water intakes to industrial plants or coastal lagoons.

Highest priority should be given to protecting coastal resources which are particularly sensitive to oil pollution and which can be boomed effectively. These can include fish and shellfish farms, industrial water intakes, leisure facilities such as marinas, and environmentally-sensitive areas, such as bird colonies.

Whilst some sites will be relatively easy to protect, others such as marshes, mangroves and amenity beaches, are often too extensive for booming to be practical. It is important to act quickly and, with limited resources available, decisions must be taken as to which sites should be given priority. This should be pre-determined, in contingency plans.

Shoreline Clean-up

Once oil has reached coastlines, response efforts should first focus on areas which have the heaviest concentrations of mobile oil, which could otherwise lead to further pollution

of surrounding areas. A combination of clean-up techniques is normally used when cleaning contaminated shorelines, including manual and mechanical removal, flushing or washing with water at high or low temperatures and pressures, and even wiping with rags and sorbent materials.

It is important to choose techniques which are appropriate for the level of contamination and shoreline type, which may range from mud flats, through sandy and cobble beaches, to rocky shores and high cliffs, as well as to man-made structures such as breakwaters and protective walls.

It is important to ensure that the techniques selected do not do more harm than good. This requires a site-specific assessment of the environmental and economic benefits of the proposed actions. In some cases the most appropriate strategy will be to allow natural clean-up and recovery to take its course. Experience around the world has shown, for example, that sensitive areas such as marshes and mangroves often recover more quickly and completely if invasive clean-up techniques and physical disturbance are avoided. Natural cleaning can also be very effective on rocky shores that are exposed to strong wave action.

Bioremediation

The application of oil-degrading bacteria and nutrients to contaminated shorelines to enhance the process of natural degradation has generated considerable interest for more than two decades. However, it has so far not been demonstrated to be technologically feasible or beneficial for large-scale restoration projects.

Disposal

At-sea recovery and shoreline clean-up generate substantial amounts of oil and oily waste which need to be transported, temporarily stored and ultimately disposed of in an environmentally acceptable manner. Such operations often continue long after the clean-up phase is over.

Liquid oil and oily water may be reprocessed at a refinery. Oily material can be used as a low-grade feedstock in some industrial processes and it may also be stabilised for use in construction projects, as a low-cost secondary raw material. More traditional disposal routes include incineration and landfill.

Organisation of Spill Response and Planning

Whilst the technical aspects of dealing with a spill are clearly important, the effectiveness of the response to a major pollution event will ultimately depend upon the quality of the contingency plan, and of the organisation and control of the various aspects of the clean-up operation.

Organisation of Spill Response

Apart from the major oil importing nations of the USA, Japan and Korea, which have little passing tanker traffic, government authorities in most countries have traditionally assumed responsibility for organising and controlling the clean-up of a major ship-source oil spill. The resources called on by such government authorities may be publicly owned or provided by private organisations under some form of contract. In anticipation of a major incident that exceeds the national capability, many governments have ratified the 1990 OPRC Convention (see page 36) and also entered into bilateral or regional inter-governmental agreements that facilitate the provision of additional clean-up resources from neighbouring countries. Assistance may also be sought from the oil industry's Tier 3 Centres or from commercial clean-up contractors.

There are good reasons why governments have traditionally assumed responsibility for responding to shipping casualties. Firstly, such incidents often involve vessels in innocent passage whose owners do not have an operational capability in the affected country and who would therefore find it difficult to respond promptly when the need arises. The responsibility for protecting a country's interests also ultimately rests with government authorities and they alone are in a position to determine priorities for protection and clean-up in the particular circumstances. The international compensation Conventions were largely created to encourage such authorities to assume the responsibility for responding to spills of persistent oil from tankers by providing a straightforward system whereby the costs of "reasonable" measures are promptly reimbursed (see pages 26 - 30).

Spill response is not a core activity for most government authorities due to the fact that serious events are an infrequent occurrence. The organisational structure for responding to ship-source spills therefore tends to follow administrative structures created for other purposes. This is particularly evident when it comes to shoreline clean-up, where the responsibility often lies with a multitude of local and regional government authorities. In harbour areas some responsibility may also fall on the port authority and on the operators of terminals and other facilities. In a major spill, this can lead to unclear command and control and a lack of co-ordination.

Such spill management problems are not overcome by inviting all interested parties to serve on one or more committees during an incident so that they can participate in the decision-making process. This can lead to large, unwieldy spill management teams, delayed decision making and, frequently, the adoption of inappropriate or conflicting response strategies.

When the oil is on the water or on the shore, informed and decisive leadership is required, with authority vested in an appropriate individual or in a small command team. This should ensure that an effective response consistent with the contingency plan is initiated promptly. However, one individual or even a small command team cannot manage the response to a significant spill alone. It will be necessary for them to be supported by experienced technical and scientific advisors (including ITOPF). Other members of the management team will need to look after the various components of the overall operation, as well as logistic support, record keeping and financial control.

Government organised response, with additional support provided by shipowners and other private entities, has proved to be a successful formula in numerous past spills. However, there is an increasing tendency by government authorities in some parts of the world to require shipowners (and even, on occasion, cargo owners) to go further and to organise and manage the clean-up of their own spills, with the authorities merely issuing directions and monitoring the results. This is despite the fact that such an obligation is often not stated in national contingency plans. This can mean that a shipowner who attempts to mount a spill response operation will be confronted by numerous practical difficulties, leading to *ad hoc* arrangements. To avoid this, the responsible government authority should define, prior to any spill occurring, how the shipowner's response operation will be integrated into its own organisational structures. It also needs to guarantee that the necessary logistic support will be available in the event of a spill (eg suitable boats, oil storage facilities, trained operators). All of this needs to be tested through realistic exercises, based on actual spill experiences.

Contingency Planning

A major spill will inevitably present those in charge with numerous, complex problems, some of which will be non-technical in nature. There is a greater likelihood that prompt and effective response decisions will be made if considerable effort has been devoted in advance of any spill to the preparation of comprehensive, realistic and integrated contingency plans for different levels of risk. Issues which are difficult to resolve prior to an incident are likely to become serious conflicts in the highly charged atmosphere following a major spill when everyone should be working together, with the common purpose of cleaning up the pollution as effectively as possible with the minimum of damage to the environment and economic resources.

As well as assessing the particular risks faced by a facility, region or country, contingency plans should clearly define the responsibilities of all the different parties likely to be involved in a spill and the organisational structure for effective command and control. There should be an up-to-date list of key contact points. On the technical side, plans should identify sensitive environmental and economic resources, priorities for protection and clean-up, agreed response strategies for different sea and shoreline areas at different times of the year, stocks of clean-up equipment and materials, temporary storage sites and final disposal options. Increasingly there is also a need to plan for managing the legitimate interests of the media in a way that ensures that they receive regular factual updates, without interfering with the control and conduct of the actual response operation.

Completed contingency plans may look impressive but, in reality, the final product is less important than the actual process of planning. Thus, the main benefit of developing a plan comes from gathering all the necessary data, consulting and getting to know all potentially interested parties, and resolving potential disputes in a calm atmosphere. For this reason it is important that those who will be required to implement the plan should also be closely involved in its preparation.

Contingency plans should be regularly tested and updated. The ultimate test is a major spill when organisational and technical problems will inevitably occur. These problems need to be identified in an objective manner before memories fade and interest wanes so that they can be addressed through amendments to the plan.

Because actual spills are rare, regular training of personnel at all levels and the testing of equipment is essential. Spill drills and exercises can be valuable in this regard, so long as they are not too ambitious and include a large element of surprise and realism, with all 'players' being willing to recognise problems in the final debrief.

Effects of Marine Oil Spills

Marine oil spills can cause serious damage to natural resources and to those whose livelihoods depend upon these resources. Such effects are normally temporary and localised, although the nature and duration of any impacts will depend on a number of factors. These include the type and amount of oil and its behaviour once spilled; the physical characteristics of the affected area; weather conditions and season; the type and effectiveness of the clean-up response; and the biological and economic characteristics of the area and their sensitivity to oil pollution.

Environmental Impacts

In considering the environmental impacts of oil spills, it is important to recognise that the marine ecosystem is highly complex and that natural fluctuations in species composition, abundance and distribution are a feature of the normal way it functions. Some of these natural fluctuations can be dramatic and result from climatic or hydrographic changes. El Niño, for example, has major consequences for marine organisms, seabirds and marine mammals throughout the entire Pacific Ocean.

Various human activities can also bring about significant environmental changes in an area. Examples are inputs of contaminants from urban and industrial discharges (often via rivers), coastal development and commercial fishing.

Against this background of natural and man-induced changes it is often difficult to establish the precise extent of the effects of an oil spill. However, it is clear from all the research conducted over the past 30 years that oil spills rarely cause long-term environmental damage. This is because any spilled oil that is not cleaned up will ultimately be broken down into its natural components. More importantly, the dynamics of the marine environment are such that most marine species have an enormous potential to recover.

Recovery Potential

Many marine organisms produce vast numbers of eggs and larvae which are released into the plankton and are widely distributed by currents. This strategy has evolved to overcome high

natural mortality rates, which in the case of the eggs and larvae of some marine species can exceed 99.99%. However, this over-production of young stages ensures that there is a considerable reservoir for the colonisation of new areas, and for the replacement of any adults which have been killed as a result of an oil spill.

Long-lived species, on the other hand, that do not reach sexual maturity for many years and which produce few offspring may take longer to recover from the effects of an oil spill. Nevertheless, many of these do have in-built compensatory mechanisms to overcome the large mortalities that can occur due to natural causes, such as severe storms or events like El Niño. Thus, some species of seabirds have been shown to mature earlier and to have extra broods after a period of population decline. Migration of adults and juveniles from neighbouring areas which have escaped the unfavourable conditions also frequently enhance the recovery process.

Habitats and Species at Risk

It is rare that the animals and plants living in the world's oceans and seas are seriously affected by an oil spill due to the high dilution potential that this habitat provides. Concerns are often expressed about the potential effects of spills on fish and shellfish eggs and larvae which are found in the plankton but there is no evidence that oil-induced losses have a significant effect on population numbers, especially when compared to the enormous natural mortalities.

Whales, dolphins and seals in the open sea are not particularly at risk from oil spills. Marine mammals that breed on shorelines are, however, more likely to encounter oil. Species which rely on fur to regulate their body heat are the most vulnerable since, if the fur becomes matted with oil, the animals may die from hypothermia or overheating.

Seabirds are the most vulnerable users of open waters since they are easily harmed or killed by floating oil. Species that dive for their food or which roost on the sea surface are particularly at risk. Although oil ingested during preening may be lethal, the most common cause of death is from drowning, starvation and loss of body heat following damage to plumage by oil. Nevertheless, the natural recovery mechanisms described earlier normally ensure that after a relatively few years there is no discernible impact on breeding populations, even when oil spill mortalities have been high.

Reduced catches of commercial fish and shellfish are sometimes reported after an oil spill. On rare occasions mortalities can be caused by physical contamination or close contact with freshly spilled oil in shallow waters with poor water exchange. More often, reduced catches are due to other factors, as described later.

Experience from past oil spills shows that coral reefs are only at risk if they are directly exposed to floating oil during extreme low tides or to high concentrations of dispersed oil. However, in most cases the corals and associated fauna are well submerged and floating oil will drift harmlessly over a reef without causing damage.

Shorelines, more than any other part of the marine environment, are exposed to the effects of oil as this is where it naturally tends to accumulate. However, many of the animals and plants on the shore are inherently tough since they must be able to tolerate periodic exposure to pounding waves, drying winds, high temperatures, rainfall and other severe stresses. This tolerance also gives many shoreline organisms the ability to withstand and recover from oil spill effects.

Rocky and sandy shores exposed to wave action and the scouring effects of tidal currents tend to be resilient to the effects of a spill as they usually self-clean quite rapidly. At the other end of the spectrum are 'soft' shores consisting of fine sands and muds. These are found in more sheltered areas, including estuaries, and tend to be highly productive, supporting large populations of migrating birds as well as shellfisheries. They also act as nursery areas for some species. If oil penetrates into fine sediments it can persist for years, increasing the likelihood of longer-term effects.

The upper fringe of 'soft' shores is often dominated by saltmarsh which, although generally only temporarily harmed by single oilings, can take more than 10 years to recover if damaged through repeated contamination. In tropical regions, mangrove swamps replace saltmarshes. The trees which provide the structure of this extremely rich and diverse habitat can be harmed if oil smothers their breathing roots or if toxic oils penetrate the sediments in which they grow. Where oiling is heavy and high mortality occurs, natural recovery can take several decades.

Restoration

Clean-up is the first stage of restoring a damaged environment. Thereafter it may be justified to take further positive steps to encourage natural recovery, especially in circumstances where it would otherwise be relatively slow. An example of such an approach following an oil spill would be to replant a saltmarsh after the bulk oil contamination had been removed. In this way erosion of the area would be minimised and other forms of biological life encouraged to return.

While it may be possible to help restore damaged vegetation and physical structures, animals are a more difficult problem. In some cases the enhanced protection of a natural breeding population at a nearby site may be warranted to provide a reservoir from which recolonisation of the damaged areas can occur.

In reality, the complexity of the marine environment means that there are significant limits to the extent to which ecological damage can be repaired by artificial means. Attempts to meticulously reinstate a damaged site will, in most cases, be both impossible and unreasonable, especially if natural recovery is likely to be rapid. In addition it must be appreciated that excessive intervention by man, for example, by trying to remove every last drop of oil, or by trying to 'engineer' the environment can often itself be destructive and hinder natural recovery.

Economic Impacts

Contamination of coastal amenity areas is a common feature of many oil spills, leading to interference with recreational activities such as bathing, boating, angling and diving. Hotel and restaurant owners and others who gain their livelihood from the tourist trade can also be temporarily affected. Recovery depends on restoring public confidence.

Industries that rely on seawater for their normal operation can be adversely affected by oil spills. Power stations and desalination plants which abstract large quantities of seawater can be particularly at risk, especially if their water intakes are located close to the sea surface, thereby increasing the possibility of drawing floating oil into the plant. The normal operations of other coastal industries, such as shipyards, ports and harbours, can also be disrupted by oil spills and clean-up operations.

Fisheries and Mariculture

An oil spill can directly damage the boats and gear used for catching or cultivating marine species. Floating equipment and fixed traps extending above the sea surface are more likely to become contaminated by floating oil, whereas submerged nets, pots, lines and bottom trawls are usually well protected provided they are not lifted through an oily sea surface. However, they may sometimes be affected by sunken oil.

Reduced catches of fish, shellfish and other marine organisms are occasionally reported after an oil spill. Most often this is due to a reduction in fishing effort. Sometimes this results from a precautionary ban on the catching and sale of fish and shellfish from the area, both to maintain market confidence and to protect fishing gear and catches from contamination. Investigation may also reveal that the reduced catches allegedly due to the oil spill are actually part of a far longer-term downward trend resulting from over-fishing, industrial pollution or the deliberate destruction of the coastal habitats (eg mangroves) that are the vital nursery areas of the commercial species.

Cultivated stocks are more at risk from an oil spill: natural avoidance mechanisms may be prevented in the case of captive species, and the oiling of cultivation equipment may provide a source for prolonged input of oil components and contamination of the organisms. Cultured seaweed and shellfish are particularly vulnerable in tidal areas where they may become contaminated with oil as the tide drops.

Spill Compensation

Civil Liability and Fund Conventions

Those affected by spills of persistent* crude oil and fuel oil from tankers benefit from a uniquely successful international compensation regime that was first devised by the governments of maritime States within the IMO in the late 1960s, but which was updated in 1992 and 2000. Under this two-tier regime both tanker owners and oil cargo receivers contribute to the payment of compensation (up to about US$270 million from 1 November 2003) according to the terms of the 1992 Civil Liability Convention (1992 CLC) and 1992 Fund Convention.

The Conventions apply in any State that chooses to ratify them, irrespective of the owner and flag of the tanker or the owner of the cargo. Most claims are settled promptly without the need for litigation because the liability of tanker owners is 'strict' (ie there is no need to prove fault).

As at 1 January, 2003, 84 States were party to both the 1992 CLC and 1992 Fund Convention (see page 37).

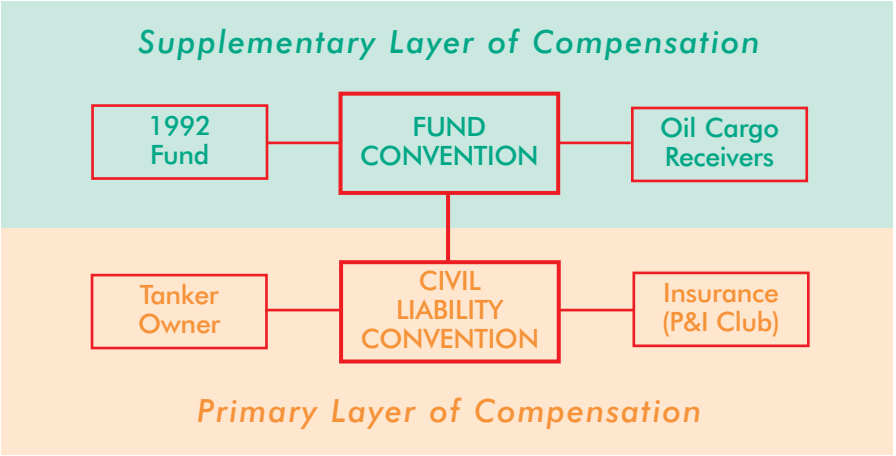
1992 CLC

Tanker owners are strictly liable to pay compensation for oil spill damage (including clean-up costs) within the Exclusive Economic Zone of an affected State, up to an amount determined by the gross tonnage of the tanker which is the source of the spill. In order to guarantee that tanker owners are able to meet their maximum potential liability the CLC requires that they maintain adequate financial security (normally through oil pollution insurance with a P&I Club). Claims for compensation may be brought directly against the insurer, thereby avoiding any problems that might be involved in identifying and locating the registered owner of the tanker. All these measures benefit the victims. In return the tanker owner may limit his liability to the defined amount, except in exceptional circumstances.

1992 Fund Convention

On the relatively rare occasions that valid claims exceed the tanker owner's limit of liability under the 1992 CLC, supplementary compensation is provided under the terms of the 1992 Fund Convention. This is done through the International Oil Pollution Compensation

* Whilst the term persistent oil is not precisely defined in any of the Conventions, the IOPC Fund has developed guidelines which are widely accepted. Under these guidelines, an oil is considered non-persistent if at the time of shipment at least 50 per cent of the hydrocarbon fractions, by volume, distill at a temperature of 340 °C (645 °F), and at least 95 per cent of the hydrocarbon fractions, by volume, distill at a temperature of 370 °C (700 °F), when tested in accordance with the American Society for Testing and Materials' Method D86/78 or any subsequent revision thereof. Oils which are normally classified as persistent include crude oils, fuel oils, heavy diesel and lubricating oils. Non-persistent oils include gasoline, light diesel oil and kerosene.



Fund (1992 Fund). The maximum amount of compensation available from the 1992 Fund is not dependent on the size of the tanker.

Payments of compensation by the 1992 Fund are financed by contributions levied on oil companies and other entities located in all 1992 Fund member States that receive crude oil and heavy fuel oil by sea. Contributions are only sought after a spill in order to pay the resulting claims.

The 1992 Fund's contribution arrangements are highly effective and ensure that the costs of oil spills are shared on a world-wide basis. They are also socially responsible since oil importing companies in 'rich' industrialised nations pay the majority of the compensation, irrespective of where the spill occurs. By ratifying the Conventions developing countries which export oil or which do not import more than 150,000 tonnes of crude oil or heavy fuel oil can have access to the full amount of compensation in the event of a tanker spill at no cost to their oil or power generating industries.

Claims Handling

P&I Clubs and the 1992 Fund co-operate closely in the assessment and settlement of claims, usually using joint experts such as ITOPF. In the event of a major incident a local claims office is usually established to assist potential claimants and to facilitate the submission of claims.

Every effort is made to settle valid claims promptly, either in whole or in part, in order to minimise any financial hardship suffered by victims. On rare occasions delays might occur if it appears that the total sum of valid claims could exceed the maximum amount of compensation available.

Compensation Limits

The liability of tanker owners under the 1992 CLC ranges from 3 million Special Drawing Rights (SDR) - about US$ 4 million - for a small tanker (up to 5,000 gross tons) to 59.7 million SDR - about US$ 80 million - for a tanker of 140,000 or more gross tons.

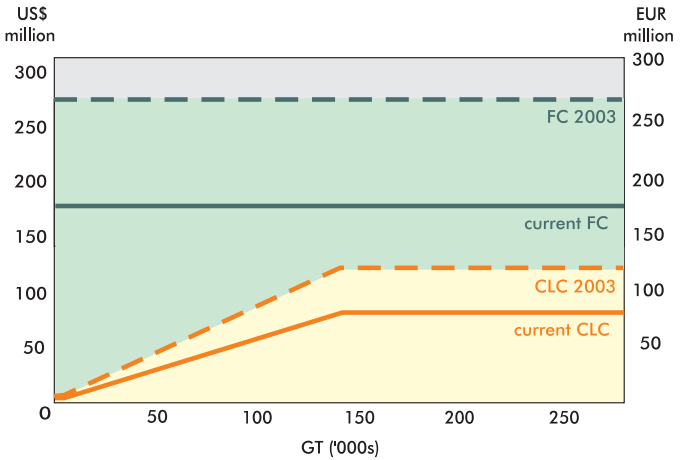
A maximum of 135 million SDR - about US$ 180 million - is available per incident from the 1992 Fund, irrespective of the size of the tanker (this figure includes the sum paid by the tanker owner or his insurer under the 1992 CLC).

In October 2000 the Contracting States to the 1992 CLC and 1992 Fund Convention approved a proposal to increase the amount of available compensation by some 50% (to a maximum of about US$ 270 million). These new 1992 CLC and Fund limits will take effect on 1 November 2003.

In May 2003 an IMO Diplomatic Conference will debate a proposed Protocol to establish a Supplementary Fund. This would increase still further the maximum amount of compensation (the limit has yet to be agreed) in those countries that opt to ratify it.

Admissible Claims

For a claim to be admissible it must fall within the definition of pollution damage or preventive measures in the 1992 CLC and Fund Convention. A uniform interpretation of the definitions and a common understanding of what constitutes an admissible claim are essential for the efficient functioning of the international system of compensation. For this reason, the Governments of the Member States of the 1992 Fund have established clear policies and guidelines, as summarised in the organisation's Claims Manual.



1992 CLC and Fund limits

Admissible claims can fall under a number of general headings:

- Preventive measures (including clean-up)
- Damage to property
- Economic losses
- Reinstatement/restoration of impaired environments

Preventive Measures

Claims for measures aimed at preventing or minimising pollution damage may include the costs of removing oil (cargo and fuel) from a damaged tanker posing a serious pollution threat, as well as the costs of clean-up measures at sea, in coastal waters and on shorelines. The costs of disposing of recovered oil and associated debris are also covered.

To qualify for compensation under the Conventions, the costs as well as the preventive measures themselves have to be "reasonable". This is generally interpreted to mean that the measures taken or equipment used in response to an incident were, on the basis of an expert technical appraisal at the time the decision was taken, likely to have been successful in minimising or preventing pollution damage. The fact that the response measures turned out to be ineffective or the decision was shown to be incorrect with the benefit of hindsight are not reasons in themselves for disallowing a claim for the costs involved. A claim may be rejected, however, if it was known that the measures would be ineffective but they were instigated simply because, for example, it was considered necessary "to be seen to be doing something". On this basis, measures taken for purely public relations reasons would not be considered reasonable.

Property Damage

Claims under this category would include the costs of cleaning contaminated fishing gear, mariculture installations, yachts and industrial water intakes. In cases of very severe contamination of fishing gear and mariculture equipment where effective cleaning is impossible, replacement of the damaged property may sometimes be justified, with a reduction for normal wear and tear.

Economic Loss

Spills can result in economic loss through, for example, preventing fishing activity or causing a reduction in tourism. Such economic losses may be the direct result of physical damage to a claimant's property ("consequential loss") or may occur despite the fact that the claimant has not suffered any damage to his own property ("pure economic loss"). An example of the first category is the fisherman who cannot fish as a consequence of his boat and gear being contaminated by oil. In the second case the fisherman remains in port while there is oil on the water in order to avoid damaging his property but then suffers "pure economic loss" as he is prevented from fishing.

Claims for pure economic loss are admissible only if they are for loss or damage caused by oil contamination. It is also necessary that there is a reasonable degree of geographic and

economic proximity between the contamination and the loss or damage sustained by the claimant.

Reinstatement/Restoration of an Impaired Environment

Claims for impairment of the environment are accepted only if the claimant has sustained an economic loss which can be quantified in monetary terms. Claims based on theoretical and speculative 'models' or formulae are therefore not admissible. On the other hand, compensation would be available for the costs of reasonable measures of reinstatement/restoration. However, for any such measures to be considered admissible they would have to satisfy a number of criteria aimed at demonstrating that they were technically feasible and likely to enhance natural recovery, and that the costs were reasonable and not disproportionate to the expected results.

The costs of post-spill environmental studies are admissible to the extent that they concern pollution damage as covered by the 1992 CLC and Fund Convention.

Record Keeping

The speed with which claims are settled depends largely upon how long it takes claimants to provide the P&I insurer and the 1992 Fund with the information they require in a format that readily permits analysis.

For this reason it is vital during any incident that records are kept of what was done, when, where and why in order to support claims for the recovery of the money spent in clean-up. Unfortunately, pressures, frequently severe, to deal with practical clean-up problems often result in record keeping being relegated to a lesser priority. The appointment of a financial controller at an early stage of an incident can be valuable, both to co-ordinate expenditure and to ensure that adequate records are maintained.

Bunker Spills Convention

Recognition of the problems that can be caused by spills of heavy bunker fuel from non-tankers led to the adoption of the International Convention on Civil Liability for Bunker Oil Pollution Damage at an IMO Diplomatic Conference in March 2001.

This IMO Convention seeks to ensure that adequate compensation is promptly available to persons who are required to clean up or who suffer damage as a result of spills of ships' bunker oil, who would not otherwise be compensated under the 1992 CLC. Although strict liability under the Bunker Spills Convention extends beyond the registered owner to the bareboat charterer, manager and operator of the ship, the Convention only requires the registered owner of ships greater than 1,000 GT to maintain insurance or other financial security. The level of cover must be equal to the limits of liability under the applicable national or international limitation regime, but in no case exceeding the amount calculated in accordance with the Convention on Limitation of Liability for Maritime Claims, 1976, as amended.

The Bunker Spills Convention will enter into force 12 months after it has been ratified by 18 States, including five States with ships whose combined gross tonnage is not less than one million GT. As at 1 January 2003, this threshold was far from being met.

HNS Convention

The International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious substances by Sea (HNS Convention) was adopted by the IMO in May 1996. It aims to ensure adequate, prompt and effective compensation for damage that may result from shipping accidents involving hazardous and noxious substances.

The Convention entitles claimants to compensation for loss or damage to persons, property and the environment caused by incidents involving cargoes of oil, gases and chemicals, plus other substances which are hazardous in packaged form. Pollution damage caused by persistent oils already covered by the CLC and Fund Convention is excluded, as is damage caused by radioactive materials and coal.

The HNS Convention is modelled on the CLC and Fund Convention. Thus, the shipowner (and his P&I insurer) is strictly liable to pay the first tier of compensation whereas the second tier comes from a fund levied on cargo receivers in all Contracting States on a post-event basis.

Shipowner liability ranges from SDR 10 million (about US$ 14 million) for ships up to 2,000 GT, rising linearly through SDR 82 million (about US$ 110 million) for ships of 50,000 GT, to a maximum of SDR 100 million (about US$ 136 million) for ships over 100,000 GT. It is compulsory for all ships over 200 GT to have insurance to cover the relevant amount.

An HNS Fund (which will most likely be administered by the secretariat of the IOPC Fund) will provide compensation up to a total of SDR 250 million (US$ 340 million), inclusive of shipowner liability but irrespective of ship size. The HNS Fund will comprise four separate accounts for oil, LPG, LNG and a general account for other HNS substances such as bulk solids and chemicals. Each separate account will meet claims attributable to the relevant cargo and will be funded in proportion to total receipts of relevant cargoes in Contributing States.

The HNS Convention will enter into force 18 months after ratification by 12 flag States, including four States each representing 2 million GT and Port States importing an annual aggregate of 40 million tonnes of chemicals and other solid bulk materials which are hazardous in packaged form. As at 1 January 2003, the Convention had only been ratified by Angola and the Russian Federation.

National Laws

A number of countries have their own domestic legislation for compensating those affected by spills of oil and other substances from ships. The most comprehensive example, which is summarised in the next section, is the US Oil Pollution Act of 1990. Canada also has its own Ship-source Oil Pollution Fund (SOPF) which can be used to pay claims arising from spills of both persistent and non-persistent oil from all types of ship. As Canada is party to the 1992 CLC and Fund Convention, the SOPF would only become involved in paying compensation in a case falling within the scope of these Conventions if the total value of the valid claims exceeded the 1992 Fund limit (as amended).

Other countries have chosen not to ratify the international Conventions and instead rely on laws originally developed for other purposes. This is frequently an unsatisfactory solution for claimants, shipowners and other parties involved in a pollution incident, since the provisions of these laws may be poorly known and of limited relevance to shipping accidents.

Oil Pollution Act of 1990

In the wake of the EXXON VALDEZ oil spill in March 1989, US Congress passed the Oil Pollution Act of 1990 (OPA '90). It is a comprehensive piece of legislation. Only those sections of OPA '90 that relate to liability and compensation for clean-up and damage, and to prevention and preparedness are briefly summarised here. More detailed information, including a complete copy of the Act and associated regulations, can be accessed via the US Coast Guard's website at www.uscg.mil.

It should be noted that OPA '90 does not prevent individual States in the USA from implementing their own more stringent oil spill laws and many have done so.

Oil Pollution Liability and Compensation

The owner, operator or bareboat charterer ("responsible party") of a vessel from which oil is discharged, or which poses a substantial threat of discharge, into the waters (out to the EEZ) of mainland USA or its overseas territories and possessions, is strictly liable for removal costs and damages.

Removal Costs

Removal costs are the costs incurred in containing and removing oil from water and shorelines, or taking other actions in accordance with the National Contingency Plan, to mitigate damage to public health or welfare, including fish, shellfish, wildlife, and public and private property, shorelines and beaches.

Damages

A wide range of damages are specifically covered by OPA '90. They include:

- real or personal property damage;
- loss of profits or earning capacity;
- loss of subsistence use of natural resources;
- loss of Government revenues from taxes, royalties, rents, fees etc;
- cost of increased public services;
- natural resource damage and the costs of assessing such damage.

Any person or government who incurs an allowable cost, damage or loss as a result of an oil pollution incident may submit claims against the responsible party or its guarantor. In certain

circumstances claims may be submitted to the Oil Spill Liability Trust Fund.

Limits

The first layer of liability is placed on the responsible party. In the case of tank vessels of less than 3,000 gross tons, this liability is the greater of US$1,200 per gross ton or US$2 million. For tank vessels of over 3,000 gross tons, it is the greater of US$1,200 per gross ton or US$10 million. For other types of vessel (eg dry cargo vessels) the limit is the greater of US$600 per gross ton or US$500,000. No liability is placed on cargo owners under OPA '90.

The owners of ships over 300 gross tons must obtain a Certificate of Financial Responsibility (COFR) as evidence of their financial capability to satisfy the maximum liability under OPA '90.

A responsible party's right to limitation under OPA '90 can be easily lost. This can happen if the incident was caused by gross negligence or wilful misconduct, or if any applicable Federal safety, construction or operating regulation is violated. The right to limit will also be lost through a failure or refusal to report the incident, to provide all reasonable co-operation and assistance requested by a responsible official in connection with removal activities, or to comply with an order under certain sections of other Acts.

Oil Spill Liability Trust Fund

In general, the Oil Spill Liability Trust Fund comes into operation when the responsible party denies a claim or fails to settle it within 90 days, or when the first level of liability is insufficient to satisfy all admissible claims for compensation. In circumstances where the Trust Fund pays claims that the responsible party has denied, it will later seek to recover the costs of settling those claims from the responsible party. The Trust Fund will consider claims for oil removal costs, third party damages and NRDA costs, although there are a number of conditions which have to be satisfied, as well restrictions as to who is able to claim from the Trust Fund.

The maximum amount of compensation available from the Trust Fund is $1 billion per incident. It derives its money from a per barrel tax on imported and domestically produced oil. The Trust Fund is administered by the National Pollution Funds Center, which produces a helpful Claimant's Information Guide. This is available from the Fund, the

address of which can be found on page 45 or at www.uscg.mil/hq/npfc/index.htm.

Prevention

There are a considerable number of sections in OPA '90 that deal with the prevention of oil spills, including provisions relating to the issue of licences to seafarers; manning standards for foreign tank vessels; US vessel traffic service systems; gauging of plating thickness; overfill, tank level and pressure monitoring devices; tanker navigation safety standards and manning; and double hull requirements for tank vessels. This last provision requires the phasing out of single hull vessels by certain dates (depending on the size and age of the tank vessels).

Tank Vessel Response Plans

The owners or operators of tank vessels are required to have approved plans for responding to a worst case discharge of oil or hazardous substance, or substantial threat thereof. Such Vessel Response Plans (VRP) are required to be consistent with the requirements of the National Contingency Plan and Area Plans and must:

(i) identify a Qualified Individual having full authority to implement removal actions;

(ii) identify and ensure the availability of private personnel and equipment necessary to respond to a worst case discharge or substantial threat thereof; and

(iii) describe the training, and equipment testing, periodic unannounced drills and response actions of the crew.

VRPs have to be updated periodically and also have to be re-submitted for approval after each significant change.

OPRC Convention

The International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) was adopted by an IMO Diplomatic Conference in November 1990. It entered into force in May 1995. In March 2000 it was extended by way of a Protocol to cover pollution incidents by hazardous and noxious substances. This Protocol has not yet entered into force.

The primary objective of OPRC 1990 is to facilitate international co-operation and mutual assistance between States and regions when preparing for and responding to major oil pollution incidents, and to encourage States to develop and maintain an adequate capability to deal with such emergencies. OPRC 1990 covers oil spills from offshore oil exploration and production (E&P) platforms, ports, oil handling facilities and ships.

By ratifying OPRC a State commits itself to establishing a national system for responding promptly and effectively to oil pollution incidents. This should include, as a basic minimum, a national contingency plan; designated national authorities and focal points responsible for oil pollution preparedness and response; oil pollution reporting procedures; and arrangements for handling requests for assistance.

In addition, each party to the Convention, either individually or through bi- or multi-lateral co-operation, and in co-operation with the oil and shipping industries, port authorities and other relevant entities, is required to ensure:

- a minimum level of pre-positioned oil spill combating equipment;
- a programme of exercises for oil pollution response organisations;
- a training programme for relevant personnel;
- mechanisms or arrangements to co-ordinate the response to an oil pollution incident; and
- capabilities to mobilise resources.

The operators of ships, E&P facilities, ports and oil terminals are also required to prepare oil pollution emergency plans. In the case of ships, this is the same plan that is required under MARPOL - the Shipboard Oil Pollution Emergency Plan or SOPEP.

The OPRC Convention will potentially benefit shipowners since it should result in more effective oil spill response around the world. For this reason ITOPF, together with other industry associations, has been co-operating with IMO to assist States to meet the various requirements of the Convention.

Status of International Conventions

This table shows which countries were parties to the 1969 CLC, 1992 CLC, 1992 Fund Convention and 1990 OPRC as at 1 January 2003. x denotes that the Convention was in force in that country, whereas + denotes that it had been ratified but was not yet in force. o denotes that the country had denounced that Convention but that it had not yet taken effect. For a current list see the IMO or IOPC Fund websites (www.imo.org; www.iopcfund.org).

	CLC 69	CLC 92	FUND 92	OPRC 90
Albania	x			
Algeria		x	x	
Angola		x	x	x
Antigua & Barbuda		x	x	x
Argentina		x	x	x
Australia		x	x	x
Austria				
Azerbaijan				
Bahamas		x	x	x
Bahrain		x	x	
Bangladesh				
Barbados		x	x	
Belarus				
Belgium		x	x	
Belize		x	x	
Benin	x			
Bosnia & Herzegovina				
Brazil	x			x
Brunei Darussalam	o	+	+	
Bulgaria				x
Cambodia	x	x	x	
Cameroon		x	x	
Canada		x	x	x
Cape Verde				
Chile	x	+		x
China		x		x
China (Hong Kong spec.admin.region)		x	x	
Colombia	x	x	x	
Comoros		x	x	x
Congo		+	+	
Costa Rica	x			
Cote d'Ivoire	x			
Croatia		x	x	x
Cuba				
Cyprus		x	x	
Czech Republic				
Dem. Rep. of the Congo				
Denmark		x	x	x
Djibouti		x	x	x
Dominica		x	x	x
Dominican Republic	x	x	x	
Ecuador	x			x
Egypt	x	x		x
El Salvador	x	+		x
Equatorial Guinea	x			
Eritrea				
Estonia	x			
Ethiopia				
Fiji		x	x	
Finland		x	x	x
France		x	x	x
Gabon	o	+	+	
Gambia	x			
Georgia	x	x	x	x
Germany		x	x	x
Ghana	x			
Greece		x	x	x
Grenada		x	x	
Guatemala	x			
Guinea		+	+	+
Guinea-Bissau				
Guyana	x			x
Haiti				
Honduras	x			
Hungary				
Iceland		x	x	x
India		x	x	x
Indonesia	x	x		
Iran				x
Iraq				
Ireland		x	x	x
Israel				x
Italy		x	x	x
Jamaica		x	x	x
Japan		x	x	x
Jordan				
Kazakhstan	x			
Kenya		x	x	x
Kiribati				
Kuwait	x			
Latvia	x	x	x	x
Lebanon	x			
Lesotho				
Liberia		x	x	x
Libya				
Lithuania		x	x	+
Luxembourg	x			
Madagascar		+	+	x
Malaysia	x			x
Maldives	x			
Mali				
Malta		x	x	
Marshall Islands		x	x	x
Mauritania	x			x
Mauritius		x	x	x
Mexico		x	x	x
Micronesia				
Monaco		x	x	x
Morocco		x	x	
Mozambique	o	+	+	
Myanmar				
Namibia		+	+	
Nauru				
Netherlands		x	x	x
New Zealand		x	x	x
Nicaragua	x			
Nigeria	o	+	+	x
North Korea				
Norway		x	x	x
Oman		x	x	
Pakistan				x
Palau				
Panama		x	x	
Papua New Guinea		x	x	
Peru	x			x
Philippines		x	x	
Poland		x	x	
Portugal	x	x	x	
Qatar		x	x	
Romania		x		x
Russian Federation		x	x	
Saint Kitts and Nevis	x			
Saint Lucia				
St. Vincent & Grenadines	x	x	x	
Sao Tome & Principe	x			
Saudi Arabia	x			
Senegal	x			x
Seychelles		x	x	x
Sierra Leone		x	x	
Singapore		x	x	x
Slovakia				
Slovenia		x	x	x
Solomon Islands				
Somalia				
South Africa	x			
South Korea		x	x	x
Spain		x	x	x
Sri Lanka		x	x	
Sudan				
Suriname				
Sweden		x	x	x
Switzerland		x		x
Syria	x			
Tanzania		+	+	
Thailand				x
Togo				
Tonga		x	x	x
Trinidad & Tobago		x	x	x
Tunisia		x	x	x
Turkey		x	x	
Turkmenistan				
Tuvalu	x			
Ukraine				
United Arab Emirates	x	x	x	
United Kingdom		x	x	x
United States				x
Uruguay		x	x	x
Uzbekistan				
Vanuatu		x	x	x
Venezuela		x	x	x
Viet Nam				
Western Samoa		+	+	
Yemen	x			
Yugoslavia	x			

Publications

ITOPF produces a wide range of technical publications and papers, a number of which are available free. A small charge is made for others, as indicated below.

Technical Information Papers

Each of these 12 TIPs covers a specific topic in a concise manner (6-8 pages) and is illustrated by colour photographs and diagrams. Topics covered are:

1 Aerial Observation of Oil at Sea
2 Use of Booms in Combating Oil Pollution
3 Aerial Application of Oil Spill Dispersants
4 Use of Oil Spill Dispersants
5 Use of Skimmers in Combating Oil Pollution
6 Recognition of Oil on Shorelines
7 Shoreline Clean-up
8 Disposal of Oil and Debris
9 Contingency Planning for Oil Spills
10 The Effects of Marine Oil Spills
11 Fate of Marine Oil Spills
12 Action: Oil Spill

Each TIP costs £1.00 per copy, reducing to £0.75 per copy (excluding postage) if more than ten complete sets are ordered.

We are currently updating the TIPs and expanding the series to reflect technological advances and ITOPF's more recent collective experience on a wide range of oil pollution topics. Two new TIPs have already been published and others will follow in 2003.

Response to Marine Oil Spills

A comprehensive review of the problems posed by marine oil spills and available response measures. The book is in five sections:

1 The Oil Spill
2 Containment and Recovery
3 The Use of Dispersants
4 Shoreline Clean-up
5 Planning and Operations

Available in English and Spanish (£15.00 per copy) from:

Witherby & Co Ltd
32-36 Aylesbury Street
London EC1R 0ET
Tel: + 44 (0) 20 7251 5341
Fax: + 44 (0) 20 7251 1296
Email: books@witherbys.co.uk

For more information on other language versions, including French, Japanese and Korean, contact ITOPF.

Tier 3 Centres

This joint ITOPF/IPIECA briefing paper summarises the Use of International Oil Industry Response Resources: Tier 3 Centres. The nine-page paper describes the features of the main Tier 3 Centres, the

resources under their control, the terms for access by third parties and the requirements for their successful use in the event of a major oil spill.

Single copies are available free from ITOPF; multiple copies will be charged at £5.00 each.

Oil Spill Compensation

ITOPF and IPIECA also co-operated to produce a briefing guide on the International Conventions on Liability and Compensation for Oil Pollution Damage. This twenty-page guide, which aims to provide a summary of the fundamental features of the Conventions, comprises an explanatory text, a PowerPoint™ presentation (which can be downloaded from the ITOPF or IPIECA Website) and a series of answers to frequently asked questions.

Single copies are available free from ITOPF; multiple copies will be charged at £5.00 each.

The ERIKA - video

ITOPF assisted in the production of this 30-minute video, which provides a graphic account of this major oil spill off France in December 1999, including the clean-up operations and the mechanisms for compensating those whose livelihoods were affected. Copies of the video are available at a cost of £12.50 (or US$20.00) from Steamship Mutual Underwriting Association Ltd:

Tel: +44 (0) 20 7247 5490
Fax: +44 (0) 20 7377 2912
E-mail: steamship@simsl.com

The Real Story - the Environmental Impact of the BRAER - video

A 30-minute video, produced by the Marine Laboratory in Scotland, which summarises the main findings of the scientific studies into the impact of this major oil spill in Shetland in January 1993.

Available from ITOPF at £10.00 in PAL and NTSC versions.

Ocean Orbit

ITOPF's newsletter with reports and articles on developments concerning oil spill preparedness, response, effects and compensation.

Annual Review

A review of ITOPF's activities during the previous 12 months, including the Directors' Report and Accounts.

Miscellaneous Papers

A wide range of papers presented by ITOPF staff at conferences, seminars and workshops, or published in journals are available on our website (www.itopf.com).

Staffing

Managing Director

Dr Ian White, OBE, a marine biologist by training, joined ITOPF in 1977 from the UK Ministry of Agriculture, Fisheries and Food, where he was in charge of research programmes on the biological effects of various marine pollutants, including oil and dispersants. He was appointed Managing Director in 1987.

Technical Team Managers

Dr Brian Dicks, a marine biologist by training, joined ITOPF in 1987, having previously been Director of the Oil Pollution Research Unit in Wales, where he was involved with numerous research studies around the world on the environmental effects of oil pollution.

Dr Tosh Moller, a marine biologist by training, joined ITOPF in 1979. Previously, he held research posts at the University of Wales and the Marine Biological Station, Isle of Man, working on mariculture and fisheries biology projects.

Hugh Parker, a chemist by training, joined ITOPF in 1980 from the Warren Springs Laboratory, where he worked on the development of aerial techniques for monitoring and combating oil spills at sea. He was earlier awarded an M.Phil. for his research on oil/water separation.

Senior Technical Advisors

Richard Johnson is a marine biologist and holds a Masters degree in Radiation and Environmental Protection. His previous employment included investigation of fallout from the Chernobyl accident and assessing radioactive contamination of the marine environment. He joined ITOPF in 1994.

Dr Karen Purnell is a chartered chemist and a member of the Royal Society of Chemistry. Prior to joining ITOPF in 1994 she was a Project Manager involved in nuclear/toxic waste management and environmental remediation.

Katharina Stanzel is a marine ecologist with a Masters degree in Coastal Management. Prior to joining ITOPF at the beginning of 1999 she worked as senior scientist and consultant on marine park and fisheries projects in Australia, Indonesia and Singapore.

Technical Advisors

Caryn Anderson has a degree in Applied Science, specialising in marine biology and environmental management, and a Masters degree in Environmental Law. Before joining ITOPF in March 2001, she worked as Environmental Manager at the Port of Townsville, Australia.

Camille Lecat has a degree in chemical and biological engineering and a Masters degree in Oceanography. She joined ITOPF in June 2001 from the French research organisation CEDRE, where she worked on the response to the ERIKA spill.

Alexander Nicolau is an engineer with degrees in chemistry and chemical engineering. Before joining ITOPF in February 2002, he worked as a consultant in marine pollution at the IMO/UNEP Regional Centre REMPEC in Malta.

Dr Michael O'Brien is a natural resource economist. Prior to joining ITOPF in March 2001, he worked in the USA for the NOAA Damage Assessment Center. Before that he was an Assistant Professor for Environmental Economics at the University of Innsbruck, Austria.

Technical Support Co-ordinators

Fionn Molloy studied engineering and has a Masters degree in Environmental Assessment and Management. He joined ITOPF in 1999 and his responsibilities include maintaining the oil spill database and ITOPF's Designated Person Survey, application of satellite imagery, and claims assessment.

Tim Wadsworth has an engineering degree. He joined ITOPF in 1991 and is responsible for assessing claims for clean-up expenses and maintaining ITOPF's spill response and costs databases.

Information Officer

Deborah Ansell has an MA in Librarianship and joined ITOPF in 1996 from the Institute of Petroleum Library. She is responsible for maintaining ITOPF's extensive library of technical publications, the website and the Country Profiles.

IT Co-ordinator

Helen Thomas has a degree in Geography. She joined ITOPF at the beginning of 1998 and is responsible for developing and maintaining ITOPF's information technology systems.

IT Support Officer

Prakash Bakrania has a degree in Computing and Information Systems and joined ITOPF in October 2000. He has previously worked in various IT support capacities, and is responsible for the day-to-day running of ITOPF's computer systems.

Finance and Administration Manager

Amanda Howarth has an MBA from Westminster University. Prior to joining ITOPF in January 2000 she gained two years financial administration experience in the tanker industry, and eight years in managerial accounts. Her main responsibilities are the management of ITOPF's financial affairs and Membership procedures.

Membership Secretary

Duncan Judd joined ITOPF in November 2001. He has a degree in politics and previously worked for the Chartered Institute of Arbitrators as Database Co-ordinator.

Finance Officer

Doreen Pounds joined ITOPF in January 2001. She is responsible for ITOPF's accounting transactions, including the collection of Membership and Associate dues.

Administration and Personnel Assistant

Carol Remnant joined ITOPF in February 2001. She is an Associate Member of the Chartered Institute of Personnel and Development, with over 10 years' practical Human Resources experience. She is responsible for all ITOPF's personnel related issues, as well as additional administrative tasks.

Technical Group Secretary

Jayne Hines has a degree in Three Dimensional Design and joined ITOPF in March 1999. Her duties include maintenance of ITOPF's extensive case-related filing system. She is also responsible for co-ordinating the movements of members of the Technical Department, and providing support in their absence.

Receptionist

Terry Goodchild worked for a market research company prior to joining ITOPF in November 2002. As well as acting as Receptionist, she undertakes general clerical duties and is responsible for the distribution of ITOPF's publications. She also provides secretarial services to the Managing Director.

Useful Addresses

International Tanker Owners Pollution Federation Limited (ITOPF)
Staple Hall, Stonehouse Court
87-90 Houndsditch, London EC3A 7AX
Tel: + 44 (0)20 7621 1255
Fax: + 44 (0)20 7621 1783
Email: central@itopf.com
Web: www.itopf.com

International Maritime Organization (IMO)
4 Albert Embankment
London SE1 7SR
Tel: + 44 (0)20 7735 7611
Fax: + 44 (0)20 7587 3210
Email: info@imo.org
Web: www.imo.org

International Oil Pollution Compensation Fund (IOPC Fund)
Portland House, Stag Place
London SW1E 5PN
Tel: + 44 (0)20 7592 7100
Fax: + 44 (0)20 7592 7111
Email: info@iopcfund.org
Web: www.iopcfund.org

International Chamber of Shipping (ICS)
Carthusian Court
12 Carthusian Street
London EC1M 6EZ
Tel: + 44 (0)20 7417 8844
Fax: + 44 (0)20 7417 8877
Email: ics@marisec.org
Web: www.marisec.org/ics

International Group of P&I Clubs
78 Fenchurch Street
London EC3M 4BT
Tel: + 44 (0)20 7488 0078
Fax: + 44 (0)20 7480 7877
Email: international.group@internationalgroup.org.uk

International Association of Independent Tanker Owners (Intertanko)
Head Office: P O Box 5804 Majorstua
N-0308 Oslo, Norway
Tel: + 47 22 12 26 40
Fax: + 47 22 12 26 41
Email: postmaster@intertanko.com
Web: www.intertanko.com

London Office: The Baltic Exchange
38 St Mary Axe, London EC3A 8BH
Tel: + 44 (0)20 7623 4311
Fax: + 44 (0)20 7626 7078

Asian Office: 5 Temasek Boulevard
#12-07 Suntec City Tower 5
Singapore 038985
Tel: + 65 6333 4007
Fax: + 65 6333 5004

US Office: 801 North Quincy Street
Suite 200, Arlington, Virginia 22203
Tel: +1 703 373 2269
Fax: +1 703 841 0389

Oil Companies International Marine Forum (OCIMF)
27 Queen Anne's Gate
London SW1H 9BU
Tel: + 44 (0)20 7654 1200
Fax: + 44 (0)20 7654 1205
Email: enquiries@ocimf.com
Web: www.ocimf.com

International Underwriting Association of London (IUA)
3 Minster Court, Mincing Lane
London EC3R 7DD
Tel: + 44 (0)20 7617 4444
Fax: + 44 (0)20 7617 4440
Email: info@iua.co.uk
Web: www.iua.co.uk

The Salvage Association
5th Floor, 37-39 Lime Street
London EC3M 7AY
Tel: + 44 (0)20 7234 9120
Fax: + 44 (0)20 7234 9168
Email: salvage@wreckage.org
Web: www.wreckage.org

International Salvage Union (ISU)
PO Box 32293
London W5 1WZ
Tel: + 44 (0)20 7345 5122
Fax: + 44 (0)20 7345 5722
Email: isu@randell.fsnet.co.uk
Web: www.marine-salvage.com

International Association of Classification Societies (IACS)
5 Old Queen Street
London SW1H 9JA
Tel: + 44 (0)20 7976 0660
Fax: + 44 (0)20 7976 0440
Email: permsec@iacs.org.uk
Web: www.iacs.org.uk

The Baltic and International Maritime Council (BIMCO)
161 Bagsværdvej
2880 Bagsværd
Denmark
Tel: + 45 44 36 68 00
Fax: + 45 44 36 68 68
Email: mailbox@bimco.dk
Web: www.bimco.dk

International Association of Dry Cargo Shipowners (Intercargo)
2nd Floor, 4 London Wall Buildings
Blomfield Street
London EC2M 5NT
Tel: + 44 (0)20 7638 3989
Fax: + 44 (0)20 7638 3943
Email: info@intercargo.org
Web: www.intercargo.org

International Petroleum Industry Environmental Conservation Association (IPIECA)
5th Floor, 209-215 Blackfriars Road
London SE1 8NL
Tel:+ 44 (0)20 7633 2388
Fax: + 44 (0)20 7633 2389
Email: info@ipieca.org
Web: www.ipieca.org

International Association of Oil and Gas Producers (OGP)
5th Floor, 209-215 Blackfriars Road
London SE1 8NL
Tel:+ 44 (0)20 7633 0272
Fax: + 44 (0)20 7633 2350
Email: reception@ogp.org.uk
Web: www.ogp.org.uk

Regional Marine Pollution Emergency Response Centre (REMPEC)
Manoel Island
Gzira GZR 03, Malta
Tel: + 356 21 33 72 96/7/8
Fax: + 356 33 99 51
Email: rempec@rempec.org
Web: www.rempec.org

RAC/REMPEITC-CARIB
Fokkerweg 26
Willemstad
Curaçao
Netherlands Antilles
Tel: + 599 9461 4012
Fax: + 599 9461 1996
Email: imoctr@attglobal .net
Web: www.rempeitc.org

National Pollution Funds Center
US Coast Guard
4200 Wilson Boulevard, Suite 1000
Arlington, Virginia VA22203-1804, USA
Tel: + 1 202 493 6700
Fax: + 1 202 493 4900
Email: jlane@ballson.uscg.mil
Web: www.uscg.mil/hq/npfc/index.htm

Terms and Conditions of Membership
(effective 20th February, 1999)

1. Membership of The International Tanker Owners Pollution Federation Limited ("ITOPF") is subject to ITOPF's Memorandum and Articles of Association and to these Terms and Conditions, which apply to all Owners who are Members of ITOPF as at 20th February, 1999, and to all Owners who thereafter are accepted for Membership. The Directors of ITOPF have the right from time to time to add to or modify these Terms and Conditions. Any such additions or modifications and their effective date will be notified to Members.

2. Membership of ITOPF is available only to an owner or demise charterer ("Owner") of a tanker, being any ship (whether or not self-propelled) designed, constructed or adapted for the carriage by water in bulk of crude petroleum, hydrocarbon products and any other liquid substance ("Tanker").

3. A Member is required to notify ITOPF (or ensure that ITOPF is notified) in writing from time to time of the name and tonnage of Tankers of which it is or becomes Owner and in respect of which it wishes to be entitled to the services of ITOPF. A Member who is no longer the Owner of any Tanker whose name and tonnage have been so notified shall automatically cease to be a Member of ITOPF.

4. Subject to these Terms and Conditions, a Member has the right to request ITOPF to provide technical and other services, advice and information ("Services") in relation to:

a) a spill (or the threat thereof) from a Tanker, including on-site attendance to give technical advice with the aim of effecting an efficient response operation and mitigating any damage;

b) the technical assessment of damage caused by a spill from a Tanker;

c) the technical assessment of claims for compensation resulting from a spill (or the threat thereof) from a Tanker;

d) oil pollution contingency planning, response techniques, oil spill effects and compensation for oil pollution damage;

e) oil spill training courses, drills, exercises and similar events; and

f) the provision of such of ITOPF's publications as are for circulation to Members and such other general information and advice as is within the scope of ITOPF's Services.

5. It is a condition of entitlement to Services that the Member's ITOPF subscription has been paid in respect of the current year commencing 20th February and for all prior periods of Membership, either directly or by another body on the Member's behalf, and in respect of all Tankers notified pursuant to paragraph 3 of which the Member is the Owner.

6. Although under no obligation to solicit or obtain such information, ITOPF reserves the right from time to time to request any Member or its insurer to provide information satisfactory to ITOPF concerning the Members' pollution liability insurance cover. It is a condition of entitlement to Services that any Member or its insurer of which such a request is made will duly comply.

7. ITOPF reserves the right to recover costs incurred in respect of the provision of any Services from a Member, on whose behalf such costs are incurred. ITOPF will not

normally charge a fee for providing Services to a Member but may do so from time to time when circumstances warrant at ITOPF's discretion. It is a condition of entitlement to Services that a Member will agree to, and arrange for, the payment of such costs and fees when so requested by ITOPF.

8. ITOPF reserves the right not to respond either in whole or in part to any request by or on behalf of a Member for the provision of Services whether because of a failure on the part of the Member to meet a condition set by ITOPF, or because of a lack of available ITOPF staff capacity, or for any reason which in ITOPF's opinion might adversely affect ITOPF, the safety of its staff, or the provision of the Services requested. In the case of competing demands for its Services, ITOPF will normally give priority to its Members.

9. To the extent permitted by law, ITOPF shall have no liability to any Member or other person for any direct, indirect, special or consequential loss, expenses and/or costs arising out of or in connection with the provision of, or failure to provide, any Services.

Note: Membership of ITOPF and payment of the relevant subscription referred to in paragraph 5 of these Terms and Conditions of Membership is normally arranged by a tanker owner's P&I insurer. This subscription is currently calculated on the basis of 0.85 of a UK penny per gross ton of entered Tankers.

Terms and Conditions of Associate Status
(effective 20th February, 1999)

1. Associate status of The International Tanker Owners Pollution Federation Limited ("ITOPF") is subject to these Terms and Conditions, which apply to all Associates of ITOPF as at 20th February, 1999, and to all persons who thereafter become Associates. The Directors of ITOPF have the right from time to time to add to or modify these Terms and Conditions.

2. Associate status of ITOPF is available only to such persons as the Directors of ITOPF may determine being an owner or demise charterer ("Owner") of any ship other than a tanker ("Ship"). For these purposes "tanker" means any ship (whether or not self-propelled) designed, constructed or adapted for the carriage by water in bulk of crude petroleum, hydrocarbon products and any other liquid substance.

3. An Associate may be required to notify ITOPF (or ensure that ITOPF is notified) in writing from time to time of the name and tonnage of Ships of which it is or becomes Owner and in respect of which it wishes to be entitled to the services of ITOPF. An Associate who is no longer the Owner of any Ship shall automatically cease to be an Associate of ITOPF.

4. Subject to these Terms and Conditions, an Associate has the right to request ITOPF to provide technical and other services, advice and information ("Services") in relation to:

a) a spill (or the threat thereof) from a Ship, including on-site attendance to give technical advice with the aim of effecting an efficient response operation and mitigating any damage;

b) the technical assessment of damage caused by a spill from a Ship;

c) the technical assessment of claims for compensation resulting from a spill (or the threat thereof) from a Ship;

d) oil pollution contingency planning, response techniques and oil spill effects;

e) oil spill training courses, drills, exercises and similar events; and

f) the provision of such of ITOPF's publications as are for general circulation and such other general information and advice as is within the scope of ITOPF's Services.

5. ITOPF will charge each Associate an annual subscription to assist in meeting its general expenses. It is a condition of entitlement to Services that the Associate's ITOPF subscription has been paid in respect of the current year commencing 20th February and for all prior periods of Associate status, either directly or by another body on the Associate's behalf and in respect of all Ships notified pursuant to paragraph 3 of which the Associate is the Owner. If in a winding-up of ITOPF there remains any surplus which is attributable to Associates' subscriptions, that surplus shall be distributed among Associates in proportion to the amounts subscribed by them.

6. Although under no obligation to solicit or obtain such information, ITOPF reserves the right from time to time to request any Associate or its insurer to provide information satisfactory to ITOPF concerning the Associate's pollution liability insurance cover. It is a condition of entitlement to Services that any Associate or its insurer of which such a request is made will duly comply.

7. ITOPF reserves the right to recover costs incurred in respect of the provision of any Services from an Associate on whose behalf such costs are incurred. ITOPF will not normally charge a fee for providing Services to an Associate but may do so from time to time when circumstances warrant at ITOPF's discretion. It is a condition of entitlement to Services that an Associate will agree to, and arrange for, the payment of such costs and fees when so requested by ITOPF.

8. ITOPF reserves the right not to respond either in whole or in part to any request by or on behalf of an Associate for the provision of Services whether because of a failure on the part of the Associate to meet a condition set by ITOPF, or because of a lack of available ITOPF staff capacity, or for any reason which in ITOPF's opinion might adversely affect ITOPF, the safety of its staff, or the provision of the Services requested. In the case of competing demands for Services, ITOPF will normally give priority to its Members.

9. To the extent permitted by law, ITOPF shall have no liability to any Associate or other person for any direct, indirect, special or consequential loss, expenses and/or costs arising out of or in connection with the provision of, or failure to provide, any Services.

10. Notices to Associates may be given in such manner as ITOPF may determine and shall be deemed given if given to an Associate's insurer or by way of press advertisement.

Note: ITOPF Associate Status and payment of the relevant subscription referred to in paragraph 5 of these Terms and Conditions of Associate Status is normally arranged by a shipowner's P&I insurer. This subscription is currently calculated on the basis of 0.23 of a UK penny per gross ton of entered ships.

Staple Hall
Stonehouse Court
87-90 Houndsditch
London EC3A 7AX
UNITED KINGDOM

Tel: +44 (0)20 7621 1255
Fax: +44 (0)20 7621 1783
24hr: +44 (0)7626 914112
Email: central@itopf.com
Website: www.itopf.com